



NATIONAL SECURITY SPACE STRATEGY

UNCLASSIFIED SUMMARY

A stylized globe showing the continents of North and South America. The globe is rendered in a dark blue color with a grid of latitude and longitude lines. The text "JANUARY 2011" is centered over the globe.

JANUARY 2011

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE JAN 2011		2. REPORT TYPE		3. DATES COVERED 00-00-2011 to 00-00-2011	
4. TITLE AND SUBTITLE National Security Space Strategy Unclassified Summary				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Department of Defense,1400 Defense Pentagon,Washington,DC,20301-1400				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 21	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

NATIONAL SECURITY SPACE STRATEGY



UNCLASSIFIED SUMMARY

TABLE OF CONTENTS

PREFACE.....	i
THE STRATEGIC ENVIRONMENT	1
STRATEGIC OBJECTIVES	4
STRATEGIC APPROACHES	5
Promoting Responsible, Peaceful, and Safe Use of Space.....	5
Providing Improved U.S. Space Capabilities	6
Partnering with Responsible Nations, International Organizations, and Commercial Firms	8
Preventing and Deterring Aggression against Space Infrastructure that Supports U.S. National Security	10
Preparing to Defeat Attacks and to Operate in a Degraded Environment.....	11
IMPLEMENTATION.....	12
CONCLUSION – A NEW TYPE OF LEADERSHIP	13




During the past 50 years, U.S. leadership in space activities has benefited the global economy, enhanced our national security, strengthened international relationships, advanced scientific discovery, and improved our way of life.


Space capabilities provide the United States and our allies unprecedented advantages in national decision-making, military operations, and homeland security. Space systems provide national security decision-makers with unfettered global access and create a decision advantage by enabling a rapid and tailored response to global challenges. Moreover, space systems are vital to monitoring strategic and military developments as well as supporting treaty monitoring and arms control verification. Space systems are also critical in our ability to respond to natural and man-made disasters and monitor long-term environmental trends. Space systems allow people and governments around the world to see with clarity, communicate with certainty, navigate with accuracy, and operate with assurance.

Maintaining the benefits afforded to the United States by space is central to our national security, but an evolving strategic environment increasingly challenges U.S. space advantages. Space, a domain that no nation owns but on which all rely, is becoming increasingly congested, contested, and competitive. These challenges, however, also present the United States with opportunities for leadership and partnership. Just as the United States helped promote space security in the 20th century, we will build on this foundation to embrace the opportunities and address the challenges of this century.

The National Security Space Strategy charts a path for the next decade to respond to the current and projected space strategic environment. Leveraging emerging opportunities will strengthen the U.S. national security space posture while maintaining and enhancing the advantages the United States gains from space.

Our strategy requires active U.S. leadership enabled by an approach that updates, balances, and integrates all of the tools of U.S. power. The Department of Defense (DoD) and the Intelligence Community (IC), in coordination with other departments and agencies, will implement this strategy by using it to inform planning, programming, acquisition, operations, and analysis.


Robert M. Gates
Secretary of Defense


James R. Clapper
Director of National Intelligence

THE STRATEGIC ENVIRONMENT

“The now-ubiquitous and interconnected nature of space capabilities and the world’s growing dependence on them mean that irresponsible acts in space can have damaging consequences for all of us.”

- 2010 National Space Policy

Space is vital to U.S. national security and our ability to understand emerging threats, project power globally, conduct operations, support diplomatic efforts, and enable global economic viability. As more nations and non-state actors recognize these benefits and seek their own space or counterspace capabilities, we are faced with new opportunities and new challenges in the space domain.

The current and future strategic environment is driven by three trends – space is becoming increasingly *congested*, *contested*, and *competitive*.

Space is increasingly *congested*. Growing global space activity and testing of China’s destructive anti-satellite (ASAT) system have increased congestion in important areas in space. DoD tracks approximately 22,000 man-made objects in orbit, of which 1,100 are active satellites (see Figure 1). There may be as many as hundreds of thousands of additional pieces of debris that are too small to track with current sensors. Yet these smaller pieces of debris can damage satellites in orbit.

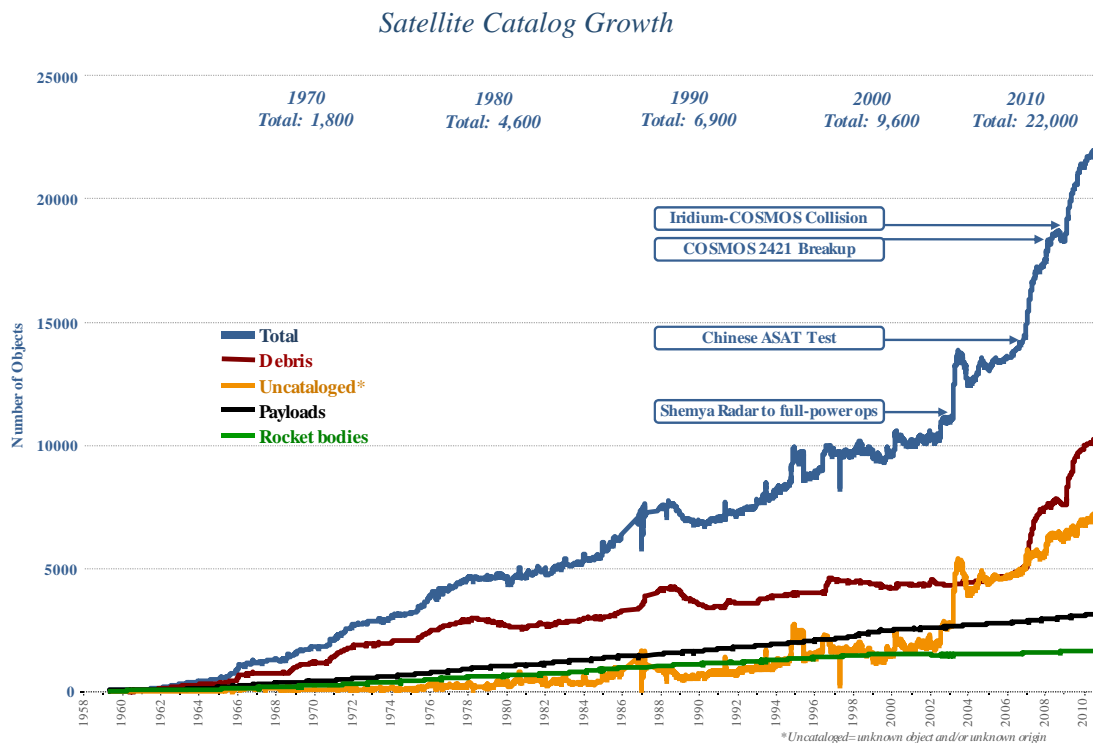


Figure 1. Source: Joint Space Operations Center

Today's space environment contrasts with earlier days of the space age in which only a handful of nations needed to be concerned with congestion. Now there are approximately 60 nations and government consortia that own and operate satellites, in addition to numerous commercial and academic satellite operators (see Figure 2). This congestion – along with the effects of operational use, structural failures, accidents involving space systems, and irresponsible testing or employment of debris-producing destructive ASATs – is complicating space operations for all those that seek to benefit from space.

Increased congestion was highlighted by the 2009 collision between a Russian government Cosmos satellite and a U.S. commercial Iridium satellite. The collision created approximately 1,500 new pieces of trackable space debris, adding to the more than 3,000 pieces of debris created by the 2007 Chinese ASAT test. These two events greatly increased the cataloged population of orbital debris.

Another area of increasing congestion is the radiofrequency spectrum. Demand for radiofrequency spectrum to support worldwide satellite services is expected to grow commensurate with the rapid expansion of satellite services and applications. As many as 9,000 satellite communications transponders are expected to be in orbit by 2015. As the demand for bandwidth increases and more transponders are placed in service, the greater the probability of radiofrequency interference and the strain on international processes to minimize that interference.

Number of Nations and Government Consortia Operating in Space

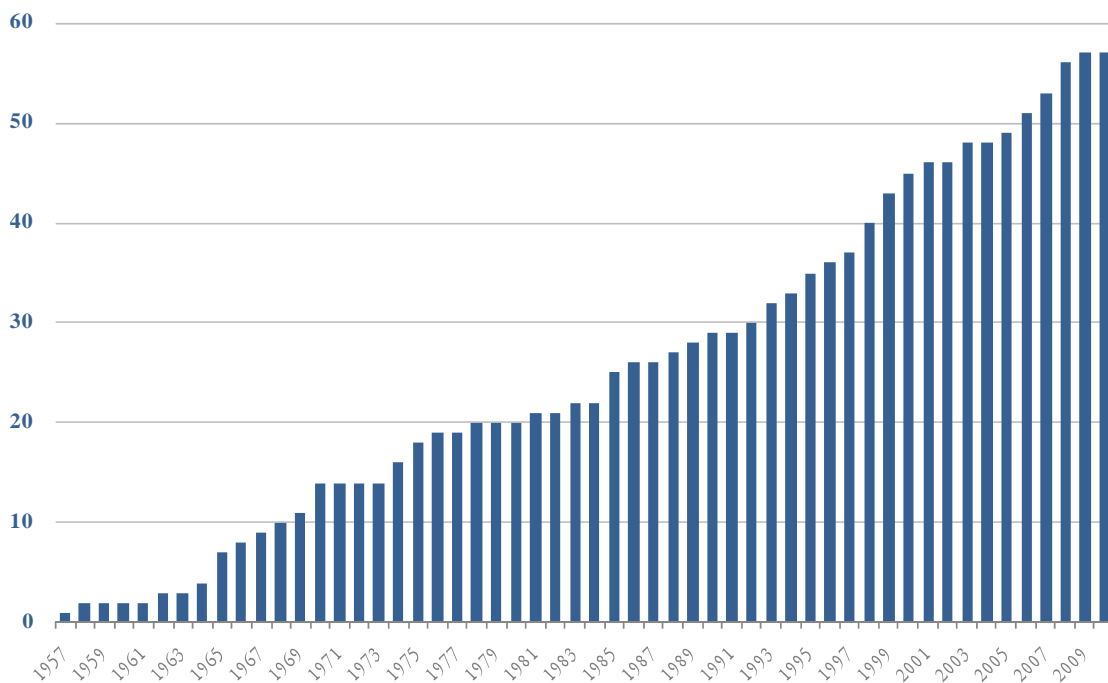


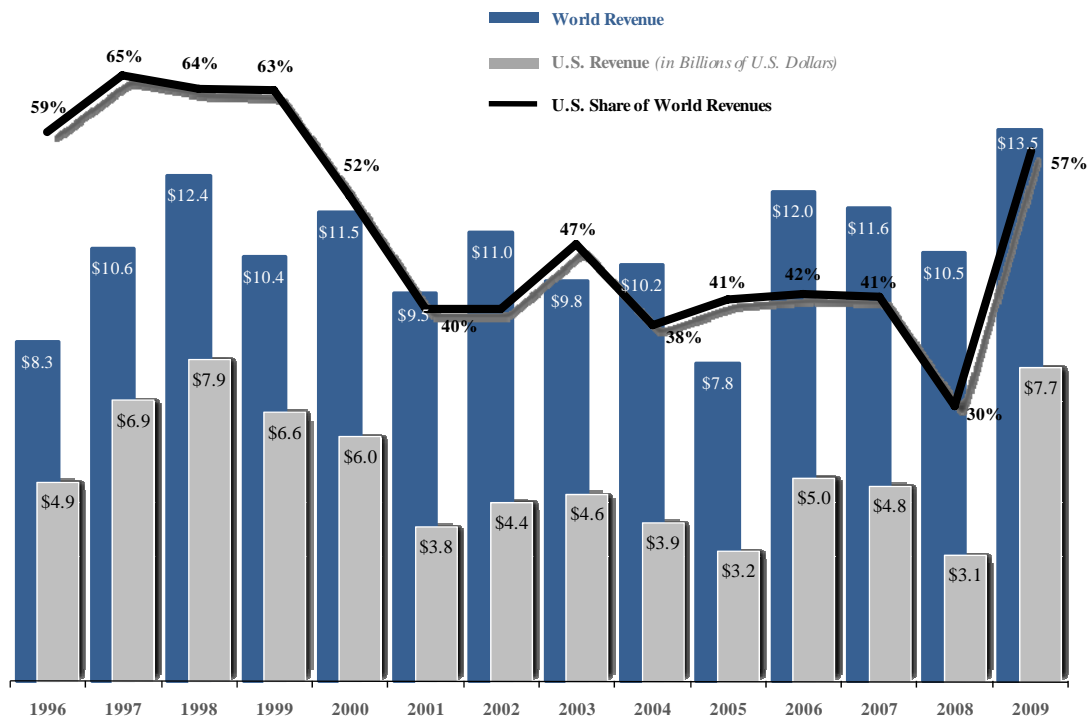
Figure 2. Source: National Air and Space Intelligence Center

Space is increasingly *contested* in all orbits. Today space systems and their supporting infrastructure face a range of man-made threats that may deny, degrade, deceive, disrupt, or destroy assets. Potential adversaries are seeking to exploit perceived space vulnerabilities. As more nations and non-state actors develop counterspace capabilities over the next decade, threats to U.S. space systems and challenges to the stability and security of the space environment will increase. Irresponsible acts against space systems could have implications beyond the space domain, disrupting worldwide services upon which the civil and commercial sectors depend.

Space is increasingly *competitive*. Although the United States still maintains an overall edge in space capabilities, the U.S. competitive advantage has decreased as market-entry barriers have lowered (see Figure 3). The U.S. technological lead is eroding in several areas as expertise among other nations increases. International advances in space technology and the associated increase in foreign availability of components have put increased importance on the U.S. export control review process to ensure the competitiveness of the U.S. space industrial base while also addressing national security needs.

U.S. suppliers, especially those in the second and third tiers, are at risk due to inconsistent acquisition and production rates, long development cycles, consolidation of suppliers under first-tier prime contractors, and a more competitive foreign market. A decrease in specialized suppliers further challenges U.S. abilities to maintain assured access to critical technologies, avoid critical dependencies, inspire innovation, and maintain leadership advantages. All of these issues are compounded by challenges in recruiting, developing, and retaining a technical workforce.

U.S. versus World Satellite Manufacturing Revenues, 1996-2009



Notes: Revenue figures are in-year estimates, not adjusted for inflation over time. Satellite Manufacturing revenues are recorded in the year the satellite is delivered/launched, not when contract is awarded or interim payments are transacted. World revenue includes U.S. revenue.

Figure 3. Source: Satellite Industry Association.

STRATEGIC OBJECTIVES

In executing the National Space Policy, our National Security Space Strategy seeks to maintain and enhance the national security benefits we derive from our activities and capabilities in space while addressing and shaping the strategic environment and strengthening the foundations of our enterprise. The U.S. defense and intelligence communities will continue to rely on space systems for military operations, intelligence collection, and related activities; access to these capabilities must be assured. We must address the growing challenges of the congested, contested, and competitive space environment while continuing our leadership in the space domain.

Our strategy is derived from the principles and goals found in the National Space Policy and builds on the strategic approach laid out in the National Security Strategy. Specifically, our national security space objectives are to:

- Strengthen safety, stability, and security in space;
- Maintain and enhance the strategic national security advantages afforded to the United States by space; and
- Energize the space industrial base that supports U.S. national security.

We seek a safe space environment in which all can operate with minimal risk of accidents, breakups, and purposeful interference. We seek a stable space environment in which nations exercise shared responsibility to act as stewards of the space domain and follow norms of behavior. We seek a secure space environment in which responsible nations have access to space and the benefits of space operations without need to exercise their inherent right of self-defense.

We seek to ensure national security access to space and use of space capabilities in peace, crisis, or conflict. We seek to meet the needs of national leaders and intelligence and military personnel, irrespective of degradation of the space environment or attacks on specific systems or satellites. Enhancing these benefits requires improving the foundational activities of our national security space enterprise – including our systems, our acquisition processes, our industrial base, our technology innovation, and our space professionals.

A resilient, flexible, and healthy space industrial base must underpin all of our space activities. We seek to foster a space industrial base comprised of skilled professionals who deliver those innovative technologies and systems that enable our competitive advantage. Our space system developers, operators, and analysts must deliver, field, and sustain national security space capabilities for the 21st century.

STRATEGIC APPROACHES

“To promote security and stability in space, we will pursue activities consistent with the inherent right of self-defense, deepen cooperation with allies and friends, and work with all nations toward the responsible and peaceful use of space.”

- 2010 National Security Strategy

The National Security Space Strategy draws upon all elements of national power and requires active U.S. leadership in space. The United States will pursue a set of interrelated strategic approaches to meet our national security space objectives:

- Promote responsible, peaceful, and safe use of space;
- Provide improved U.S. space capabilities;
- Partner with responsible nations, international organizations, and commercial firms;
- Prevent and deter aggression against space infrastructure that supports U.S. national security; and
- Prepare to defeat attacks and to operate in a degraded environment.

Promoting Responsible, Peaceful, and Safe Use of Space

“All nations have the right to use and explore space, but with this right also comes responsibility. The United States, therefore, calls on all nations to work together to adopt approaches for responsible activity in space to preserve this right for the benefit of future generations.”

- 2010 National Space Policy

As directed in the National Space Policy, the United States will promote the responsible, peaceful, and safe use of space as the foundational step to addressing the congested and contested space domain and enabling other aspects of our approach. We will encourage allies, partners, and others to do the same. As more nations, international organizations, and commercial firms field or aspire to field space capabilities, it is increasingly important that they act responsibly, peacefully, and safely in space. At the same time, they must be reassured of U.S. intentions to act likewise. We will encourage responsible behavior in space and lead by the power of our example. Moreover, U.S. diplomatic engagements will enhance our ability to cooperate with our allies and partners and seek common ground among all space-faring nations.

The United States will support development of data standards, best practices, transparency and confidence-building measures, and norms of behavior for responsible space operations. We will consider proposals and concepts for arms control measures if

they are equitable, effectively verifiable, and enhance the national security of the United States and its allies. We believe setting pragmatic guidelines for safe activity in space can help avoid collisions and other debris-producing events, reduce radiofrequency interference, and promote security and stability in the space domain – all of which are in the interests of all nations.

Shared awareness of spaceflight activity must improve in order to foster global spaceflight safety and help prevent mishaps, misperceptions, and mistrust. The United States is the leader in space situational awareness (SSA) and can use its knowledge to foster cooperative SSA relationships, support safe space operations, and protect U.S. and allied space capabilities and operations.

DoD will continue to improve the quantity and quality of the SSA information it obtains and expand provision of safety of flight services to U.S. Government agencies, other nations, and commercial firms. DoD will encourage other space operators to share their spaceflight safety data. DoD, in coordination with other government agencies, will seek to establish agreements with other nations and commercial firms to maintain and improve space object databases, pursue common international data standards and data integrity measures, and provide services and disseminate orbital tracking information, including predictions of space object conjunction, to enhance spaceflight safety for all parties.

Providing Improved U.S. Space Capabilities

“Being able to deliver capability cost-effectively when it is needed improves mission effectiveness, provides leadership with flexibility in making investments, and precludes gaps in necessary capabilities.”

- 2009 National Intelligence Strategy

U.S. space capabilities will continue to be fundamental for national security. DoD and the IC will identify, improve, and prioritize investments in those capabilities that garner the greatest advantages. We will develop, acquire, field, operate, and sustain space capabilities to deliver timely and accurate space services to a variety of customers, from soldiers to national decision-makers. We will enhance interoperability and compatibility of existing national security systems, across operational domains and mission areas, to maximize efficiency of our national security architecture; we will ensure these characteristics are built into future systems. We will ensure that data collection and products are released at the lowest possible classification to maximize their usefulness to the user community.

Ensuring U.S. capabilities are developed and fielded in a timely, reliable, and responsive manner is critical for national decision-makers to act on time-sensitive and accurate information, for military forces to plan and execute effective operations, and for the IC to enable all of the above with timely indications and warning. Improving our acquisition processes, energizing the U.S. space industrial base, enhancing technological innovation, and deliberately developing space professionals are critical enablers to maintaining U.S. space leadership.

In cooperation with our industrial base partners, DoD and the IC will revalidate current measures and implement new measures, where practicable, to stabilize program acquisition more effectively and improve our space acquisition processes. We will

reduce programmatic risk through improved management of requirements. We will use proven best practices of systems engineering, mission assurance, contracting, technology maturation, cost estimating, and financial management to improve system acquisition, reduce the risk of mission failure, and increase successful launch and operation of our space systems.

Mission permitting, we will synchronize the planning, programming, and execution of major acquisition programs with other DoD and IC processes to improve efficiencies and overall performance of our acquisition system and industrial base. DoD and the IC will evaluate the requirements and analysis of alternatives processes to ensure a range of affordable solutions is considered and to identify requirements for possible adjustment. The requirements process must produce combinations of material and non-material solutions. Realistic cost and schedule estimates must inform the President's annual budget request. Human resources processes must provide the right personnel for successful execution.

We seek to foster a U.S. space industrial base that is robust, competitive, flexible, healthy, and delivers reliable space capabilities on time and on budget. DoD and the IC, in concert with the civil space sector, will better manage investments across portfolios to ensure the industrial base can sustain those critical technologies and skills that produce the systems we require. Additionally, we will continue to explore a mix of capabilities with shorter development cycles to minimize delays, cut cost growth, and enable more rapid technology maturation, innovation, and exploitation.

A key aspect of energizing the U.S. space industrial base is to reform U.S. export controls to address technology security and global competitiveness. Export controls have a far-reaching impact on national security interests, as they help deter illicit efforts by others to obtain and use the materials, technology, and know-how that are vital to our national security. Export controls, however, can also affect the health and welfare of the industrial base, in particular second-tier and third-tier suppliers. Reforming export controls will facilitate U.S. firms' ability to compete to become providers-of-choice in the international marketplace for capabilities that are, or will soon become, widely available globally, while strengthening our ability to protect the most significant U.S. technology advantages. In particular, as new opportunities arise for international collaboration, a revised export control system will better enable the domestic firms competing for these contracts. Revised export control policies will address U.S. firms' ability to export space-related items generally available in the global marketplace, consistent with U.S. policy and international commitments.

We will continue to pursue, adapt, and evolve the unique technologies, innovative exploitation techniques, and diverse applications that give the United States its strategic advantage in space. The United States seeks to maintain and enhance access to those global and domestic technologies needed for national security space systems. We will do so by expanding technology partnerships with the academic community, industry, U.S. and partner governments, mission customers, and other centers of technical excellence and innovation, consistent with U.S. policy, technology transfer objectives, and international commitments. To advance the science and technology that enables U.S. space capabilities, we will continue to assess global technology trends to find emerging technologies and potential breakthroughs. We will explore new applications of current

technologies and the development of unique, innovative technologies and capabilities. We will improve the transition of scientific research and technology development to the operational user and into major system acquisition. To the extent practicable, we will also facilitate the incorporation of these capabilities and technologies into appropriate domestic space programs.

People are our greatest asset. To support the range of national security space activities, we will develop current and future national security space professionals – our “space cadre” – who can acquire capabilities, operate systems, analyze information, and succeed in a congested, contested, and competitive environment. We will build a more diverse and balanced workforce among military, civilian, and contractor components. These professionals must be educated, experienced, and trained in the best practices of their field – whether it is planning, programming, acquisition, manufacturing, operations, or analysis.

We will continue to encourage students at all levels to pursue technical coursework as a foundation for space-related career fields. Working with other departments and agencies, we will synchronize our science, technology, engineering, and mathematics (STEM) education initiatives with sound education investments to ensure an ample supply of space professionals with appropriate skills and capabilities. We will encourage our space professionals to participate in STEM outreach and mentoring programs.

We will continue to develop structured personnel development programs to expand, track, and sustain our space expertise, employing focused education and training as well as purposeful utilization of our people to offer a broad range of experiential opportunities. We will further professional development by growing, rewarding, and retaining scientific and technical expertise and professional leadership. We will support an entrepreneurial ethos by encouraging initiative, innovation, collaboration, resourcefulness, and resilience. As national security space priorities shift, we will continue to educate and train the workforce to align with new priorities.

Partnering with Responsible Nations, International Organizations, and Commercial Firms

“[E]xplore opportunities to leverage growing international and commercial expertise to enhance U.S. capabilities and reduce the vulnerability of space systems and their supporting ground infrastructure.”

- 2010 Quadrennial Defense Review

The evolving strategic environment allows for additional opportunities to partner with responsible nations, international organizations, and commercial firms. DoD and the IC will continue to partner with others to augment the U.S. national security space posture across many mission areas. This includes looking for opportunities to leverage or work in conjunction with partnerships pursued by U.S. Government civil space agencies. By sharing or exchanging capabilities, data, services, personnel, operations, and technology, we can ensure access to information and services from a more diverse set of systems – an advantage in a contested space environment. We will promote appropriate cost-sharing and risk-sharing partnerships to develop and share capabilities. Decisions on partnering

will be consistent with U.S. policy and international commitments and consider cost, protection of sources and methods, and effects on the U.S. industrial base.

Partnering with other nations also is essential to ensuring global access to the radiofrequency spectrum and related orbital assignments and promoting the responsible, peaceful, and safe use of outer space. Nations gain international acceptance of their use of the radiofrequency spectrum and satellite orbits through the International Telecommunication Union (ITU). Registering satellite networks with the ITU can help prevent and, if necessary, address radiofrequency interference.

The United States will lead in building coalitions of like-minded space-faring nations and, where appropriate, work with international institutions to do so. With our allies, we will explore the development of combined space doctrine with principles, goals, and objectives that, in particular, endorse and enable the collaborative sharing of space capabilities in crisis and conflict. We will seek to expand mutually beneficial agreements with key partners to utilize existing and planned capabilities that can augment U.S. national security space capabilities. We will pursue increased interoperability, compatibility, and integration of partner nations into appropriate DoD and IC networks to support information sharing and collective endeavors, taking affordability and mutual benefit into account. At the same time, U.S. military and intelligence personnel will ensure the appropriate review and release of classified information to enhance partner access to space information.

We will actively promote the sale of U.S.-developed capabilities to partner nations and the integration of those capabilities into existing U.S. architectures and networks. Posturing our domestic industry to develop these systems will also enable the competitiveness of the U.S. industrial base.

We will explore sharing space-derived information as “global utilities” with partnered nations. As we do today with the positioning, navigation, and timing services of the Global Positioning System, we will provide services derived from selected space systems and enhance those services through partnerships. We will continue to share SSA information to promote responsible and safe space operations. We will also pursue enhanced sharing of other space services such as missile warning and maritime domain awareness. We may seek to establish a collaborative missile warning network to detect attacks against our interests and those of our allies and partners.

Strategic partnerships with commercial firms will continue to enable access to a more diverse, robust, and distributed set of space systems and provide easily releasable data. Strategic partnerships with commercial firms will be pursued in areas that both stabilize costs and improve the resilience of space architectures upon which we rely. Innovative approaches will be explored for their utility in meeting government performance requirements in a cost-effective and timely manner. We will rely on proven commercial capabilities to the maximum extent practicable, and we will modify commercial capabilities to meet government requirements when doing so is more cost-effective and timely for the government. We will develop space systems only when there is no suitable, cost-effective commercial alternative or when national security needs dictate.

Preventing and Deterring Aggression against Space Infrastructure that Supports U.S. National Security

“U.S. forces must be able to deter, defend against, and defeat aggression by potentially hostile nation-states. This capability is fundamental to the nation’s ability to protect its interests and to provide security in key regions.”

- 2010 Quadrennial Defense Review

Given the degree to which the United States relies on space systems and supporting infrastructure for national security, we must use a multilayered approach to prevent and deter aggression. We seek to enhance our national capability to dissuade and deter the development, testing, and employment of counterspace systems and prevent and deter aggression against space systems and supporting infrastructure that support U.S. national security.

Many elements of this strategy contribute to this approach. We will: support diplomatic efforts to promote norms of responsible behavior in space; pursue international partnerships that encourage potential adversary restraint; improve our ability to attribute attacks; strengthen the resilience of our architectures to deny the benefits of an attack; and retain the right to respond, should deterrence fail.

DoD and the IC will support the diplomatic and public diplomacy efforts of the Department of State to promote the responsible use of space and discourage activities that threaten the safety, stability, and security of the space domain. We will also work with the Department of State and other appropriate U.S. Government agencies to strengthen alliances with other space-faring nations and pursue partnerships with commercial firms and international organizations.

We will improve our intelligence posture – predictive awareness, characterization, warning, and attribution – to better monitor and attribute activities in the space domain. Thus, SSA and foundational intelligence will continue to be top priorities, as they underpin our ability to maintain awareness of natural disturbances and the capabilities, activities, and intentions of others. We will also enable and develop intelligence professionals who can provide greater scope, depth, and quality of intelligence collection and analysis.

We will seek to deny adversaries meaningful benefits of attack by improving cost-effective protection and strengthening the resilience of our architectures. Partnerships with other nations, commercial firms, and international organizations, as well as alternative U.S. Government approaches such as cross-domain solutions, hosted payloads, responsive options, and other innovative solutions, can deliver capability, should our space systems be attacked. This also will enable our ability to operate in a degraded space environment.

Finally, the United States will retain the right and capabilities to respond in self-defense, should deterrence fail. We will use force in a manner that is consistent with longstanding principles of international law, treaties to which the United States is a party, and the inherent right of self defense.

Preparing to Defeat Attacks and Operate in a Degraded Environment

“Increase assurance and resilience of mission-essential functions enabled by commercial, civil, scientific, and national security spacecraft and supporting infrastructure against disruption, degradation, and destruction, whether from environmental, mechanical, electronic, or hostile causes.”

- 2010 National Space Policy

We believe it is in the interests of all space-faring nations to avoid hostilities in space. In spite of this, some actors may still believe counterspace actions could provide military advantage. Our military and intelligence capabilities must be prepared to “fight through” a degraded environment and defeat attacks targeted at our space systems and supporting infrastructure. We must deny and defeat an adversary’s ability to achieve its objectives.

As we invest in next generation space capabilities and fill gaps in current capabilities, we will include resilience as a key criterion in evaluating alternative architectures. Resilience can be achieved in a variety of ways, to include cost-effective space system protection, cross-domain solutions, hosting payloads on a mix of platforms in various orbits, drawing on distributed international and commercial partner capabilities, and developing and maturing responsive space capabilities. We will develop the most feasible, mission-effective, and fiscally sound mix of these alternatives.

To make the most effective use of space protection resources, we will identify and prioritize protection for vital space missions supporting national security requirements. We will implement cost-effective protection commensurate with threat, system use, and impact of loss – applied to each segment of our space systems and supporting infrastructure.

To enhance resilience, we will continue to develop mission-effective alternatives, including land, sea, air, space, and cyber-based alternatives for critical capabilities currently delivered primarily through space-based platforms. In addition, we will seek to establish relationships and agreements whereby we can access partner capabilities if U.S. systems are degraded or unavailable. We will be prepared to use these capabilities to ensure the timely continuity of services in a degraded space environment.

Preparing for attacks must extend to the people and processes relying on space information, operating our space systems, and analyzing space-derived information. We will improve the ability of U.S. military and intelligence agencies to operate in a denied or degraded space environment through focused education, training, and exercises and through new doctrine and tactics, techniques, and procedures (TTPs).

IMPLEMENTATION

Consistent with the guidance provided by the President in the National Space Policy, DoD and the IC will implement the National Security Space Strategy by using it to inform future planning, programming, acquisition, operations, and analysis guidance. DoD and the IC will work with other U.S. Government agencies and departments, as well as foreign governments and commercial partners, to update, balance, and integrate all of the tools of U.S. power. We will evolve policies, strategies, and doctrine pertaining to national security space.

Implementation plans will be developed based on feasibility and affordability assessments and cost, benefit, and risk analyses. Further, the impact of plans on manning, operations, and programs will be understood prior to implementation. As stated in the National Security Strategy, our ability to achieve long-term goals for space depends upon our fiscal responsibility and making tough choices, such as between capability and survivability.

CONCLUSION – A NEW TYPE OF LEADERSHIP

“Our national security strategy is, therefore, focused on renewing American leadership so that we can more effectively advance our interests in the 21st century. We will do so by building on the sources of our strength at home, while shaping an international order that can meet the challenges of our time.”

- 2010 National Security Strategy

The United States will retain leadership in space by strengthening our posture at home and collaborating with others worldwide. Just as U.S. national security is built upon maintaining strategic advantages, it is also increasingly predicated on active U.S. leadership of alliance and coalition efforts in peacetime, crisis, and conflict.

Active U.S. leadership in space requires a whole-of-government approach that integrates all elements of national power, from technological prowess and industrial capacity to alliance building and diplomatic engagement. Leadership cannot be predicated on declaratory policy alone. It must build upon a willingness to maintain strategic advantages while working with the international community to develop collective norms, share information, and collaborate on capabilities.

U.S. leadership in space can help the United States and our partners address the challenges posed by a space domain that is increasingly congested, contested, and competitive. Our strategy seeks to address this new environment through its set of interrelated approaches:

- We seek to address *congestion* by establishing norms, enhancing space situational awareness, and fostering greater transparency and information sharing. Our words and deeds should reassure our allies and the world at large of our intent to act peacefully and responsibly in space and encourage others to do the same.
- We seek to address the *contested* environment with a multilayered deterrence approach. We will support establishing international norms and transparency and confidence-building measures in space, primarily to promote spaceflight safety but also to dissuade and impose international costs on aggressive behavior. We will improve and protect vital U.S. space capabilities while using interoperability, compatibility, and integration to create coalitions and alliances of responsible space-faring nations. We will improve our capability to attribute attacks and seek to deny meaningful operational benefits from such attacks. We will retain the right and capabilities to respond in self-defense, should deterrence fail.
- We seek to address *competition* by enhancing our own capabilities, improving our acquisition processes, fostering a healthy U.S. industrial base, and strengthening collaboration and cooperation.

Our objectives are to improve safety, stability, and security in space; to maintain and enhance the strategic national security advantages afforded to the United States by space; and to energize the space industrial base that supports U.S. national security. Achieving these objectives will mean not only that our military and intelligence communities can continue to use space for national security purposes, but that a community of nations is working toward creating a sustainable and peaceful space environment to benefit the world for years to come.